**What is claimed is:**

1. A method for compressing and decompressing video image data of video image sequences or the like, which are present as a sequence of in each case in two-dimensionally addressable pixels of associated pixel data [3], wherein in each case the pixel data of selected pixel quantities are analyzed with mathematical functions and are compressed reduced to their function parameters and after storage and/or transmission are decompressed with a corresponding mathematical function such that they are largely regenerated, characterized in that in a basic analysis of the video data of a video image

- contours of image structures are determined on the basis of non-sequential changes in brightness and/or color value in the case of pixels that are adjacent to one another,
- through interpolation, a smoothing and closure of contours is performed,
- the contours that are found in this way are described in segments in each case through a parameterized mathematical function and are defined as objects, wherein all objects that contain a number of pixels below a predefinable threshold are assigned to a background,
- for the individual objects and the background a color dominance and color progression is determined vectorially in each case,
- the position and extent of the individual objects are determined vectorially in each case,
- for the individual objects and the background, a structure function is determined in each case according to direction and size,

and that in the case of sequence analyses of video images,

[3] Translator's note: This literal translation of this sentence clause is based on a sentence clause with incoherent grammar in the German-language source document.

- in each case the differential changes in brightness, size, position and orientation of the objects are determined, taking into account the common contours of objects that abut one another,
- the objects and the background that are defined in this way, together with their optical, positional and structural data that are obtained in this way, are arranged and provided in a structured basic frame or sequence frame,
- the basic frame data and sequence frame data that are provided accordingly are transformed into pixel data for decompression and image re-processing,
- in that from the basic frame data from the objects, their corresponding contour position data in the pixel image are determined,
- for the background of the image and the objects, respectively delimited on the basis of the contour position data, the pixel representation are [sic] filled up with pixel data corresponding to the given associated structure function,
- which are reconstituted in accordance with the color dominance value and the color progression vector as well as the brightness value, and
- the sequence frame data are applied in each case to the previous pixel representation for displacement and/or alteration

2. A method according to claim 1, characterized in that the objects described are stored with their mathematical functions in a neural network (NN1), which serves for the further recognition (OE) of objects in video image data (VD).

3. A method in accordance with any of the above claims, characterized in that structure functions (OS) that have been determined are stored with their parameters of objects and backgrounds in a neural network (NN2), which serves as a starting basis in the further determination of structure functions (OS) with their parameters.

4. A method in accordance with any of the above claims, characterized in that the structure function (OS) is represented in each case as a mathematical function and the parameters are whole-number values and the function provides an unlimited number of places after the decimal point.

5. A method in accordance with claim 4, characterized in that the structure function (OS) is a fraction, an nth root or a transcendental function.

6. A method in accordance with claim 4 or 5, characterized in that the whole-number values are represented, encrypted, as powers of prime numbers as well as sums or difference thereof.

7. A method in accordance with any of claims 4 to 6, characterized in that the parameters are represented as modulo 2 to the power of 8, and the function are [sic] executed with quantities that are represented as modulo 2 to the power of 8, and provide such quantities as places after the decimal point.

8. A method in accordance with any of the claims 4 to 7, characterized in that the individual structure functions (OS) are determined in each case approximately matching to a pixel data sequence of an image line segment of predefined length or of a rectangular pixel image segment.

9. A method in accordance with claim 8, characterized in that the line segment has a length of 64, 128 or 256 bytes or the pixel image segment has a size of 8 times 8 or 16 times 16 bytes.

10. A method in accordance with one of the claims 8 or 9, characterized in that the structure function (OS) is adapted in each case as long or as precisely through successive approximation to the pixel data sequence that is to be approximately represented in each case, which is determined by a time specification (TMax) or an accuracy specification.

11. A method in accordance with claim 10, characterized in that the time specification or accuracy specification is determined depending on the position or a given speed of change of position of the given object, wherein for objects lying and/or resting centrally in the image, a longer time and/or a higher level of accuracy is assigned than for objects at the edge and/or objects that are in relatively fast motion and/or for the background.

12. A method in accordance with any of the preceding claims, characterized in that in each case only those objects are subjected to further identification and characterization that have a minimum number of pixels, and smaller objects are assigned to the background.

13. A method in accordance with claim 12, characterized in that the objects are processed one after another with a decreasing number of pixels as long as the available computing time allows, through which in the encryption of an image content, the minimum number of pixels of the objects is determined according to the available computing time.